

REMARKS

As a result of the foregoing amendment, Claims 9, 13, 16 and 24 have been amended to recite that the plastic material is polyester and that the crystallization temperature is 140 to 180°C. Claims 10, 14, 22, and 26 have been cancelled without prejudice. Claims 11, 15, 23 and 27 have been amended to correct their dependency. Reconsideration and withdrawal of the rejection of Claims 9-24 (it is noted that Claims 25-26 were not included in this rejection) as being anticipated by the '346 patent are requested. The '346 patent is directed only to the polymerization of lactic acid wherein the ratio of the polymerized monomer units must be within a certain range. This has nothing to do with the present process which is directed to the production and treatment of And are ready polymerized polyester. Certainly, the '346 patent does not disclose the treatment of an already polymerized polyester and crystallizing it at a temperature of 140 to 180 C°. Moreover, the '346 patent contains no disclosure whatsoever of the treatment of already polymerized polyethylene terephthalate. Consequently, it can not be an anticipating reference and this rejection is untenable and should be withdrawn.

It is further noted that the inventors have surprisingly found that the crystallization temperature should be between 140 and 180 °C. When crystallizing in this temperature range, rapid crystallite growth occurs while the formation of new crystallites is relatively slow. As a result, there is a tendency that fewer crystallites, but on average, each one having a larger crystallite size, are formed. This crystallite structure leads to increased reactivity in the subsequent solid-state polymerization process. In this process, the COOH and OH groups of the polyester molecules react in a condensation reaction splitting off an H₂O molecule. It is known that this solid-state polymerization (condensation) reaction is diffusion-limited, i.e., the diffusion of velocity/mobility of the H₂O molecules is the "bottle-neck" of this reaction. Thus, the crystallite structure of the polyester produced by the crystallization as recited in claim 9 results in increased mobility of the H₂O molecules and results in increased solid-state polymerization rates. Nothing in the references of record suggests or disclose this.

Reconsideration and withdrawal of the rejection of Claims 9-12 as being unpatentable over the combination of the '721 patent taken with the '969 patent, DE '347 and the '322 patent are requested. The '721 patent does not disclose nor in any way remotely suggest the specific sequence of process steps recited in Claim 9. That is to say, the reference does not disclose a procedure wherein an already polymerized polyester is not subjected to heating after step (a), i.e., the provision of the amorphous polyester from a melt reactor and wherein it is subjected to sieving prior to the crystallization step.

The secondary references relied on by the Examiner simply do not disclose or remotely suggest the inclusion of these specific steps as required by Claims 9 and 12. Moreover, the '721 patent specifically requires the melt polymerization of an antimony-containing monomer mixture by heating it in at least two stages. The present claims do not disclose any type of polymerization. Rather, amorphous already polymerized polyester is introduced from a melt reactor. It is pelletized, crystallized and post-condensed but is not subjected to heating after the introduction of the amorphous polymer from the melt reactor and is subjected to sieving after the crystallization step. The '721 patent has nothing to do with such a process. At best, it discloses polymerizing an antimony containing monomer mixture, extruding the molten polymer into a water bath to quench it and then pelletizing the quenched polymer and finally crystallizing the polymer pellets by heating in air. Clearly, the reference does not disclose the required absence of heating subsequent to the melting step or prior to the crystallization step and pelletizing after the crystallization step. Indeed, clearly this reference specifically teaches pelletizing the quenched polymer prior to the crystallization. There is nothing in the secondary reference which suggests that one could or should reverse this series of steps as required by the present claims. Accordingly, this rejection is also untenable and should be withdrawn

In view of the foregoing it is submitted that this application is now in condition for allowance and favorable reconsideration and prompt Notice of Allowance are earnestly

solicited.

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JEG:jlw

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